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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,774	03/30/2001	Jonathan Sobel	57983.000046	6976
7590 Thomas E. Anderson Hunton & Williams Suite 1200 1900 K Street, N.W. Washington, DC 20006		02/26/2007	EXAMINER NAHAR, QAMRUN	
			ART UNIT 2191	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		02/26/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/822,774

Applicant(s)

SOBEL ET AL.

Examiner

Qamrun Nahar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 November 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-8 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8 and 10-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This action is in response to the amendment filed on 11/21/2006.
2. Claim 1 has been amended.
3. The objection to claim 1 is withdrawn in view of applicant's amendment.
4. Claims 1-3, 5-8 and 10-13 are pending.

Response to Amendment

Specification

5. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

the limitation "at least one processor readable carrier" on line 5 of claim 11; and

the limitation "a signal embodied in a carrier wave" on lines 1-2 of claim 13.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 11 and 13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 11 recites "at least one processor readable carrier, and instruction carried on the at least one carrier" which is non-statutory as not being tangibly embodied in a manner so as to be executable.

Claim 13 recites “a signal embodied in a carrier wave” which is non-statutory as not being tangibly embodied in a manner so as to be executable.

The Office's current position is that claims involving signals encoded with functional descriptive material do not fall within any of the categories of patentable subject matter set forth in 35 U.S.C. § 101, and such claims are therefore ineligible for patent protection. *See* 1300 OG 142 (November 22, 2005), in particular, see Annex IV(c).

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3, 5-8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Piazza (U.S. 5,881,291) (art of record) in view of Sakai (U.S. 6,113,650).

As Per Claim 1, Piazza teaches a compiler and compilation method for processing a source program in a programming language in the Scheme/Lisp family into a representation known as continuation-passing style (CPS) before generating object code, with optimization also being involved in the processing.. (E.g. see Abstract and associated text). In that Piazza discloses the method that covering the steps of:

“transforming a first program (E.g. see FIG. 1, source code 11 and associated text, i.e. Scheme programming language) having a first multi-tasking property (note that Scheme has been using continuations to simulate multitasking, E.g. see Applicant's specification, page 17, lines

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20-22), wherein the first multi-tasking property comprises a property relating to a preemptive multitasking model (E.g. see FIG. 2, test block 23 and associated text, i.e. a long-running “loop set”), into a data structure (E.g. see FIG. 1, standard CPS 15 and associated text);”.

“transforming the data structure to include an explicit multi-tasking transfer of control command (E.g. see FIG. 1, standard CPS 15 and associated text);”

“optimizing the data structure to reduce an amount of program state that is saved at a transfer of control (E.g. see FIG. 1, OPTIMIZATION 16 and associated text);” and

“generating a second program having a second multi-tasking property, wherein the second multi-tasking property comprises a property relating to a run-to-completion model. (E.g. see FIG. 2, test block 24, “convert-loop” and associated text, i.e. after conversion, the long running loop is no longer long but several small/short pieces, so each piece can be run within a certain period of time interval, which can be considered as a “run-to-completion”), using the optimized data structure (E.g. see FIG. 1, GENERATE OBJECT CODE 12 and associated text).”

Piazza teaches a programming language in the Scheme/Lisp family. Piazza does not explicitly teach C/C++ program. Sakai teaches C/C++ program (“C program” in column 12, lines 17-22).

It would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Piazza to include C/C++ program using the teaching of Sakai. The modification would be obvious because one of ordinary skill in the art would be motivated to optimize C/C++ program loops (Sakai, column 3, lines 40-58).

As per Claim 2, the rejection of claim 1 is incorporated and further Piazza teaches

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“the data structure further comprises a syntax tree (E.g. see col. 1:45-46, CPS tree).”

As per Claim 3, the rejection of claim 2 is incorporated and further Piazza teaches

“the step of transforming the data structure to include an explicit multi-tasking transfer of control command further comprises: converting the syntax tree to a continuation-passing style (CPS).” (E.g. see FIG. 1, standard CPS 15 and associated text).

As per Claim 5, the rejection of claim 1 is incorporated and further Piazza teaches

“the first program having a first multi-tasking property operates using a first program language and the second program having a second multi-tasking property also operates using the first program language.” (E.g. see col. 1:39-55, which states “... the transformation or conversion consists of adding an extra argument, a continuation, to each combination. ...”). It is inherent that the second program language is still the same as the first program language.

As per claims 6-8 and 10, are system claims corresponding to the method claims 1-5 and are rejected under the same reason set forth in connection of the rejection of claims 1-3 and 5 respectively. Further Piazza discloses computer system (E.g. see FIG. 3 and associated text; and col. 8:58 to col. 10:61).

As per claims 11-12, are article of manufacture and processor readable medium, which are in fact a product claim corresponding to the method claim 1 and are rejected under the same reason set forth in connection of the rejection of claim 1 respectively. (E.g. see col. 8:58 to col. 10:61).

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10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Piazza (U.S. 5,881,291) (art of record) in view of Sakai (U.S. 6,113,650), and further in view of Bak (U.S. 6,704,927).

As per Claim 13, is a product claim corresponding to the method claim 1 and are rejected under the same reason set forth in connection of the rejection of claim 1. The combination teaching of Piazza and Sakai does not explicitly disclose a signal embodied in a carrier wave. However, Bak teaches “a data signal embodied in a carrier wave” (E.g. see col. 11:16-20). It is a well-known practice. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Bak into the system of Piazza and Sakai, to have a data signal embodied in a carrier wave. The modification would have been obvious because one of ordinary skill in the art would have been motivated to include this well-known practice in the product so that it can be used in various environments.

Response to Arguments

11. Applicant's arguments filed on 11/21/2006 have been fully considered but they are not persuasive.

In the remarks, the applicant argues that:

a) With regards to claim 11, Applicant respectfully submit that support for at least one “processor” is found in the specification ... With regards to claim 13, Applicant respectfully submit that support for “a signal” for a carrier wave is found in the specification ...

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Examiner's response:

- a) There is no support in the specification for “**carrier**” as recited in claim 11 or “**carrier wave**” as recited in claim 13.

In the remarks, the applicant argues that:

- b) The subject matter rejection of claims 11 and 13 are statutory.

Examiner's response:

- b) Claims 11 and 13 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 11 recites “at least one processor readable carrier, and instruction carried on the at least one carrier” which is non-statutory as not being tangibly embodied in a manner so as to be executable.

Claim 13 recites “a signal embodied in a carrier wave” which is non-statutory as not being tangibly embodied in a manner so as to be executable.

The Office's current position is that claims involving signals encoded with functional descriptive material do not fall within any of the categories of patentable subject matter set forth in 35 U.S.C. § 101, and such claims are therefore ineligible for patent protection. *See* 1300 OG 142 (November 22, 2005), in particular, see Annex IV(c).

Since there is no support in the specification for “carrier” as recited in claim 11 or “carrier wave” as recited in claim 13, the applicant is suggested to cancel claims 11 and 13.

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In the remarks, the applicant argues that:

- c) Regarding independent claim 1, the Applicant asserts that Sakai fails to cure the deficiencies of Piazza.

Examiner's response:

- c) In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Sakai is relied upon for the limitation "C/C++ program" while Piazza teaches a programming language in the Scheme/Lisp family.

In the remarks, the applicant argues that:

- d) The Examiner had used "impermissible hindsight" for the motivation provided to combine Piazza and Sakai.

Examiner's response:

- d) In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the

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applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). Therefore, it would have been obvious to one having ordinary skill in the computer art at the time of the invention was made to modify the method disclosed by Piazza to include C/C++ program using the teaching of Sakai. The modification would be obvious because one of ordinary skill in the art would be motivated to optimize C/C++ program loops (Sakai, column 3, lines 40-58).

In the remarks, the applicant argues that:

e) The existence of C/C++ at the time of Piazza clearly demonstrates that those skilled in the art recognized the associated difficulties in going from programming C/C++ to programming in Scheme. Thus, this provides clear evidence to support a lack of motivation, not a teaching away, and in particular, that it would not have been obvious to substitute one program for the other, as alleged in the Office Action.

Examiner's response:

e) Examiner strongly suggests incorporating the C/C++ **source program** to C/C++ **source program** translation in the claims. If independent claims 1 and 6 were amended to include C/C++ **source program** to C/C++ **source program** translation, then the claims *may* overcome the prior art of record. **If Applicant requires further explanation regarding on how to overcome the prior art, then the applicant is suggested to submit an Applicant Initiated Interview Request form PTOL-413A.**

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In the remarks, the applicant argues that:

f) Regarding claims 6 and 11-12, these claims recite subject matter related to claim 1. Thus, the arguments set forth above with respect to claim 1 are equally applicable to claims 6 and 11-12.

Examiner's response:

f) The Examiner had already addressed the applicant's arguments regarding claim 1 in the Examiner's Responses (c) thru (e) above. See the Examiner's Response (c) thru (e) above.

In the remarks, the applicant argues that:

g) Regarding claims 2-3, 5, 7-8, and 10, these claims are dependent upon either independent claim 1, 6, 11, or 12. Thus, since independent claims 1, 6, 11, and 12 should be allowable as discussed above, 2-3, 5, 7-8, and 10 should also be allowable at least by virtue of their dependency on either independent claim 1, 6, 11, or 12.

Examiner's response:

g) The Examiner had already addressed the applicant's arguments regarding claim 1 in the Examiner's Responses (a) thru (e) above. See the Examiner's Responses (a) thru (e) above.

In the remarks, the applicant argues that:

h) Regarding claim 13, Bak is relied upon to allegedly disclose "a data signal embodied as a carrier wave." However, Bak does not cure the above-noted deficiencies of the proposed

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combination of Piazza and Sakai. For at least this reason Applicants respectfully request that the rejection of claim 13 be withdrawn.

Examiner's response:

h) The Examiner had already addressed the applicant's arguments regarding claim 1 in the Examiner's Responses (a) thru (e) above. See the Examiner's Responses (a) thru (e) above.

Conclusion

12. **If Applicant requires further explanation regarding on how to overcome the prior art**, then the applicant is suggested to submit an Applicant Initiated Interview Request form PTOL-413A.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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14. Any inquiry concerning this communication from the examiner should be directed to Qamrun Nahar whose telephone number is (571) 272-3730. The examiner can normally be reached on Mondays through Fridays from 9:30 AM to 6:00 PM.

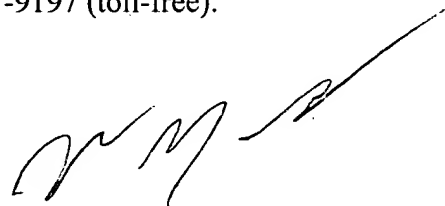
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wei Y Zhen, can be reached on (571) 272-3708. The fax phone number for the organization where this application or processing is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Qamrun Nahar
February 19, 2007



WEI ZHEN
SUPERVISORY PATENT EXAMINER